NORTHWOODS JOURNAL – JULY 2020

A Free Publication about Enjoying and Protecting Marinette County's Outdoor Life

In This Issue:

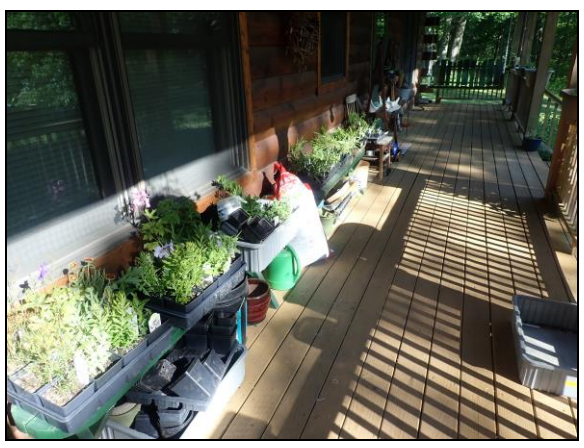
More P.I.G. installed gardens:

Update - Pollinator Invitation Garden (P.I.G.) Project

By Anne Bartels, Information & Education Specialist

This summer's P.I.G. ("Pollinator Invitation Garden") Project to help Marinette County residents and organizations create pollinator habitat has been a great success. As of July 1, 28 of the 40 participants' gardens have been installed. Each participant will also receive a metal sign to place near their garden to inform people of the garden's purpose:

When I started this project I had lots of spare time, as my usual spring is taken up mostly by school groups, public events, and conservation camp planning. But, as everywhere else, COVID had other plans for us, and our usual schedules flew out the window. However, I was always told to make lemonade out of lemons, and that's why I started the P.I.G. project – to educate people, help wildlife, and get folks out of doors and active in a time when being cooped up is the norm. I hope to resume P.I.G. next summer, although on a much smaller scale if my usual education programming schedule goes back to normal.



My porch – the P.I.G. prep area – with plants ready for garden installations; below, taking plants to work!

On average, each garden got between 25-35 plants – several species, a few of each species – so I estimate that I have dug up over 800 plants since mid-May - a lot of plants! Below and in the left bottom column are some of the newly-installed gardens from all around the county. In the August & September issues, I will include more garden install photos and how some of them are looking after settling in.

Plastic Problems – Plastic Pollution and Some Solutions

Plastic pollution has become one of the most pressing environmental issues, as rapidly increasing production of disposable plastic products overwhelms the world's ability to deal with them. Plastic pollution is most visible in developing Asian and African nations, where garbage collection systems are often inefficient or nonexistent. But the developed world, especially in countries with low recycling rates, also has trouble properly collecting discarded plastics. Plastic trash has become so ubiquitous it has prompted efforts to write a global treaty negotiated by the United Nations. How did this happen?

Plastics made from fossil fuels are just over a century old. Production and development of thousands of new plastic products accelerated after World War II, so transforming the modern age that life without plastics would be unrecognizable today. Plastics revolutionized medicine with life-saving devices, made space travel possible, lightened cars and jets - saving fuel and pollution - and saved lives with helmets, incubators, and equipment for clean drinking water.

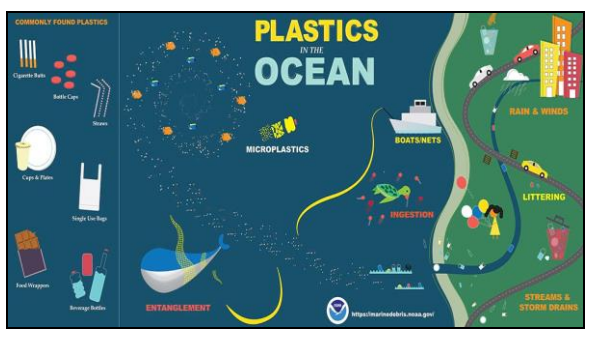
The conveniences plastics offer, however, led to a throw-away culture that reveals the material's dark side: today, single-use plastics account for 40 percent of the plastic produced every year. Many of these products, such as plastic bags and food wrappers, have a lifespan of mere minutes to hours, yet they may persist in the environment for hundreds of years.

Some key facts:

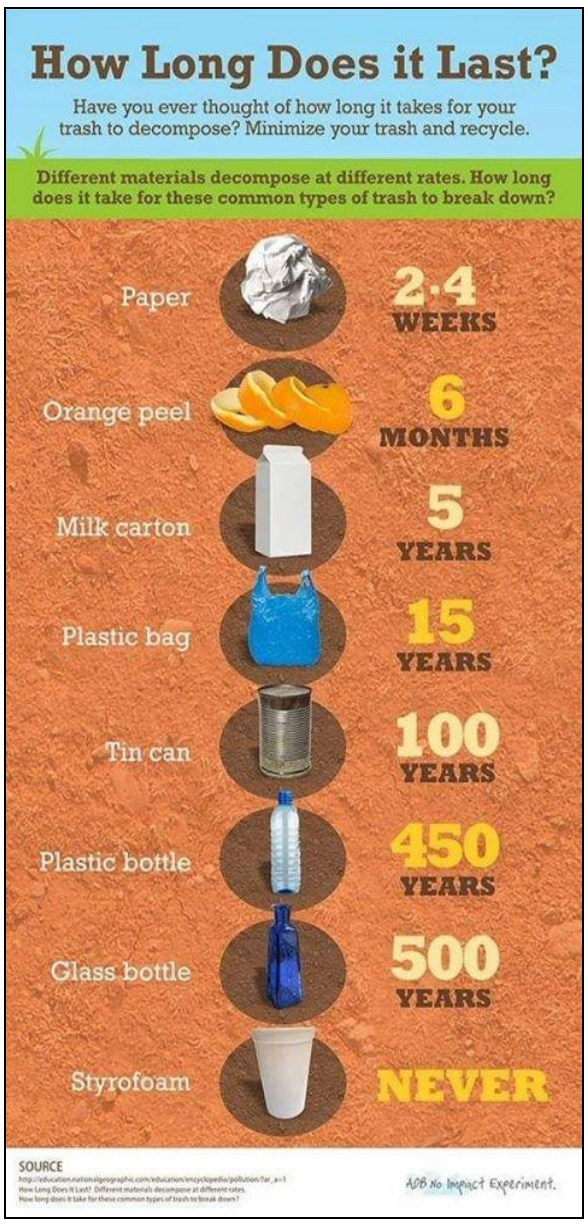
- Half of all plastics ever manufactured have been made in the last 15 years.
- Production increased exponentially, from 2.3 million tons in 1950 to 448 million tons by 2015. Production is expected to double by 2050.
- Every year, about 8 million tons of plastic waste escapes into the oceans from coastal nations. That's the equivalent of setting five garbage bags full of trash on every foot of coastline around the world.
- Plastics often contain additives making them stronger, more flexible, and durable. But many of these additives can extend the life of products if they become litter, with some estimates ranging to at least 400 years to break down.

How plastics move around the world

Most of the plastic trash in the oceans, Earth's last sink, flows from land. Trash is also carried to sea by major rivers, which act as conveyor belts, picking up more and more trash as they move downstream. Once at sea, much of the plastic trash remains in coastal waters. But once caught up in ocean currents, it can be transported around the world.



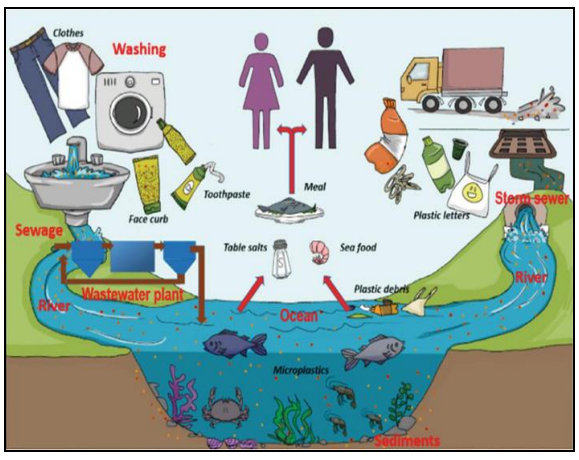
On Henderson Island, an uninhabited atoll in the Pitcairn Group isolated halfway between Chile and New Zealand, scientists found plastic items from Russia, the United States, Europe, South America, Japan, and China. They were carried to the South Pacific by the South Pacific gyre, a circular ocean current.



Microplastics

Once at sea, sunlight, wind, and wave action break down plastic waste into small particles, often less than one-fifth of an inch across. These so-called *microplastics* are spread throughout the water column and have been found in every corner of the globe, from Mount Everest, the highest peak, to the Mariana Trench, the deepest trough.

Microplastics are breaking down further into smaller and smaller pieces. Plastic microfibers, meanwhile, have been found in municipal drinking water systems and drifting through the air. Once plastics break down into microplastics and drift throughout the water column in the open ocean, they are virtually impossible to recover.



Harm to wildlife

Millions of animals are killed by plastics every year, from birds to fish to other marine organisms. Nearly 700 species, including endangered ones, are known to have been affected by plastics. Nearly every species of seabird eats plastics. Most of the deaths to animals are caused by entanglement or starvation. Seals, whales, turtles, and other animals are strangled by abandoned fishing gear or discarded six-pack rings. Microplastics have been found in more than 100 aquatic species, including fish, shrimp, and mussels destined for our dinner plates.

The solution is to prevent plastic waste from entering rivers and seas in the first place, say many scientists and conservationists. This could be accomplished with improved waste management systems and recycling, better product design that takes into account the short life of disposable packaging, and reduction in manufacturing of unnecessary single-use plastics.

What Can You Do to Help Combat Plastic Pollution?

Reduce

Reduce your own plastic waste. Start by using this online "plastic calculator" (https://www.earthday.org/plastic-pollution-calculator-2/) to track how much you use - then you can take steps to reduce your use and waste.

Reuse

- Bring your own reusable shopping and produce bags to markets, and avoid using single-use plastic bags.
- Bring your own reusable coffee cup when going out to get beverages.
- Get a reusable stainless steel, glass, or bamboo straw to use instead of wasteful plastic ones.
- Instead of buying water in plastic bottles, invest in a water filter and reusable water bottle(s). *Bonus: it's cheaper in the long run.*
- Make your own reusable cloth bags from old t-shirts, using basic sewing skills (find simple instructions online).
- Choose clothing and other personal items made from earth-friendly materials instead of microfibers and other synthetic fibers, which pollute our water.
- Bring a reusable container to a restaurant with you when you expect to have leftovers.

Refuse

Refuse straws: It's as simple as adding, "No straw, please" when requesting beverages at restaurants or cafes. Refuse beverage tops. *(Are you really going to spill?)*

Remove

Pick up trash in your neighborhood and when visiting parks and beaches.

Recycle

Recycle the plastics you use and no longer need. Return single-use bags to grocery stores for them to recycle.

Rally

Does your city or state have bans on single-use plastics? Send a letter or call your local elected leaders, urging them to ban plastic bags and other single-use plastic items. Vote for candidates committed to protecting and improving our environment.

Continued next page

Tune-up Your Immune System in the Garden - the Science of Why Digging in the Dirt is Good for You

https://www.walkersdrugstore.com/tune-up-your-immune-system-in-the-garden/

A backyard garden is a place of beauty, an attraction for birds, insects, and wildlife, and a personalized market for the most local produce imaginable. But did you know your garden can also tune up your immune system, ward off depression and even make you smarter?

It's been nearly 25 years since Dr. David Strachan first proposed the "Hygiene Hypothesis" linking skyrocketing incidences of immune system disorders like allergies and asthma to the hyper-clean environments that people in the developed world inhabited in the second half of the 20th century.

As public health officials and immunologists struggled to understand the swelling ranks of the world's wealthy sick, the hypothesis provided an intriguing basis for research. Perhaps most significantly, it's given us a much clearer picture of the subtle but crucial ways the human organism co-evolved with the broader microbial ecology around it. Rather than looking at a human being as a standalone entity, which somehow arose unencumbered from the evolutionary process, we can now say that our bodies are themselves communities of organisms, most of which are not, in fact, "us."

Any given square inch of soil is home to some 4 billion tiny creatures — bacteria, algae, fungi, protozoa, nematodes and more — living out their lives and making various byproducts from their own metabolic functions. For most of humanity's time on Earth, we have encountered these masses of organisms all day, every day. We constantly consumed a thriving ecology in our food, water, and even in our breath. Some of these organisms became the gut flora we've come to know as probiotics, while others appear to have volunteered critical pieces of our immunological arsenal. And because the immune system could count on a steady stream of these biological tourists over the course of its lifetime, there was never a reason to develop the capabilities that they provided.

But in the 20th century, this co-evolutionary arrangement was suddenly upended in favor of hospital births, pasteurized foods, chlorinated tap water, and sanitized indoor environments where we live, go to school and work. So our immune systems, deprived of what some researchers now refer to as "old friend" organisms, suddenly lacked key components for operations, and for many of us, has gone a little crazy. This is the hygiene hypothesis version 2.0. The concern is no longer that the wealthy parts of the world live in environments that are too clean, but rather that we live in environments where we have isolated ourselves from the microbial communities and biological processes that created us in the first place. The specifics of immunoregulation by our "old friends" remain somewhat mysterious, but data increasingly suggest benefits from ongoing exposure to the world hidden within the soil. It's great news for gardeners. Aside from the pleasure they get from time spent in the garden, it turns out they've been giving their immune systems a tune up, too. And with new research suggesting a link between inflammation - a key indicator of immune dysregulation - and a myriad of diseases including depression, it could be that a little patch of vegetables or flowers packs the same punch as a bottle of anti-depressant medication.

Meet Mycobacterium vaccae, one of the better known "old friend" species. M. vaccae is a common, non-pathogenic soil bacterium that we typically ingest as we breathe when we're outside in nature. Researchers have found that when cancer patients are exposed to M. vaccae, they report improved mood, energy and vitality.

If you're feeling down, or even just a bit mentally sluggish, exposure to M. vaccae may be just the pick-me-up you're looking for. In experiments on mice, M. vaccae has been shown to improve learning and reduce stress and anxiety by encouraging the brain to produce more serotonin. Serotonin doesn't just lift the mood and help with memory formation; it also plays a role in regulating appetite, sleep and other basic functions vital to a happy, healthy life.

But until recently, it wasn't clear what element in M. vaccae was responsible for the positive effects. Newer research shows that the anti-inflammatory fat in M. vaccae is the secret ingredient, and according to researchers at University of Colorado-Boulder, that could even lead to a "stress" vaccine for humans. Not only does the garden let you mingle with "old friend" organisms, but simply being outside in the sun gives the body a chance to make some vitamin D. The skin needs sunlight to produce the compound, and in much of the developed world, where so much of life happens indoors, vitamin D deficiencies are the norm. Which is really a shame, since it both inhibits inflammation and improves mood.

Those probiotic bugs in our digestive tract play an important role in a healthy immune system, too. When mice are raised with germ-free GI tracts, they display poor immunity and high reactivity to allergens. Once inoculated with common gut flora, their immune responses become more normal and their susceptibility to inflammatory diseases decreases.

Encourage a healthy ecology in your body by incorporating cultured foods in your diet. And if you garden, you have the added benefit of putting your own produce, and your own microbial neighborhood, into the mix. The research is pretty straightforward these days. The presence of certain organisms and environmental factors provides the immune system with information it needs to function, properly recognizing danger while ignoring harmless factors, and correctly modulating the body's inflammatory response. And while basic sanitation and good habits like hand washing have saved countless lives over the last century, it's high time that we welcome back some of the organisms that helped make us who we are today.

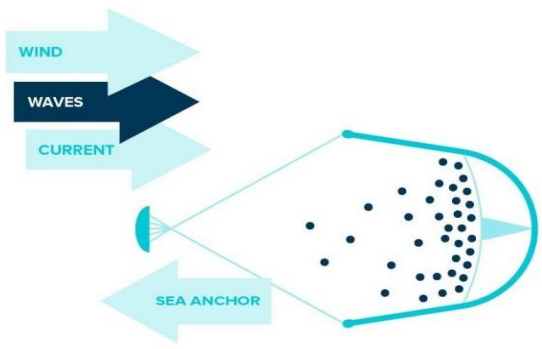
Plastics, continued from pg. 2

Information for this article from:

- https://www.nationalgeographic.com/environment/habitats/plastic-pollution/
- https://www.earthday.org/what-you-can-do-to-end-plastic-pollution/

More information about microplastics and ocean cleanup efforts at:

- https://theoceancleanup.com/ - a boom system invented to help clean up ocean plastic concentrations



- https://www.goodnewsnetwork.org/ocean-cleanup-collects-first-plastic-from-great-pacific-garbage-patch/

- https://www.oceanicsociety.org/blog/1720/7-ways-to-reduce-ocean-plastic-pollution-today
- https://oceanservice.noaa.gov/hazards/marinedebris/plastics-in-the-ocean.html
- https://storymaps.arcgis.com/stories/a26147cb6bca407a8aae19cd5301285e

Northwoods Journal
Volume 18, Issue 2

The *Northwoods Journal* focuses on various outdoor recreation opportunities and local environmental topics to inform readers about natural resource use, management, and recreation in Marinette County.

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What you need to know about beneficial bugs - not all insects are bad for your garden!

The Mother Nature Network

Praying Mantis

If you have plants in your garden that attract pollinators, take a closer look at what's landing on those flowers. Chances are they're getting many more visitors than the honeybees, bumblebees and butterflies you're accustomed to observing.

You're likely to see an amazing diversity of smaller insects that you've never noticed before - damsel bugs, lacewings, wasps that look like wasps (and wasps that don't) as well as a variety of flies that look like bees but aren't. Look up, and you might even see a dragonfly hovering overhead. Welcome to the fascinating world of beneficial insects. It's a little-noticed group, but one that brings not only diversity but also gives pollinator gardens an added super power: **These good guys eat tiny bad guys, such as mites and aphids.**

Lacewing

"Pollinators get a lot of press," said Becky Griffin, the school and community garden coordinator for the University of Georgia's College of Agriculture. "But if you're gardening to take care of your pollinators, go ahead and start taking a closer look, because you are going to be attracting all sorts of beneficial insects as well." Being familiar with a wide variety of pollinators is a specialty for Griffin, who also manages UGA's Pollinator Spaces Project, which encourages gardeners and public landscape managers to leave a dedicated space for pollinators.

Griffin's definition of a pollinator garden is as simple as it is achievable: It's a garden in which the floral resources include a variety of plant and flower sizes that produce a succession of blooms throughout as much of the year as possible. This ecosystem will attract a surprising number and diversity of beneficial insects you won't immediately recognize - simply because you aren't used to looking for them. And even if you have been looking, they are easy to miss; they tend to be smaller than honeybees, bumblebees and butterflies.

To help identify beneficial insects, Griffin recommends contacting your local cooperative extension office. Ask them to send you copies of the information sheets they use rather than referring you to a bigger field guide. "A field guide for insects would probably be overwhelming because it would include more insects than you want to know about," she said, adding that beneficial insects tend to be localized. "By asking your county extension agent to send you the resources they use, you can create your own field guide," she said.

You also probably already have another handy insect ID tool in your pocket: a smartphone. Because the small size of beneficial insects complicates the difficulty in identifying them, put your camera phone close to the insect and use the magnifying option to enlarge your view. You can take a photo of it, or just use the enlarged view to help you compare the insect with another image.

The magnifying feature can also be useful in determining the difference between insects, like comparing a bee and a fly that mimics a bee. "I like to tell beginners, 'Go look at those insect faces,'" said Griffin. Specifically, use the enlargement function to look at the eyes. Flies have eyes that cover most of their heads. Another defining characteristic is whether the insect has hair on its body - bees do, flies usually don't, or at least not as much as bees. A third characteristic, one that's more difficult to distinguish even with a camera phone, is the number of wing pairs. Bees have two pair of wings; flies have one pair.

Magnifying options can also help you understand what the insect does. "If the mouthparts are chewing, then they may be chewing on your flower. If they have really good mandibles (jaws), they may be about to eat an insect." If you see something you don't recognize, Griffin suggests emailing a photo to your county agent and asking him or her to ID the insect. **In the meantime, here are a few photos and descriptions of some beneficial insects to start your own resource guide to helpful bugs.**

Parasitic wasps don't look like wasps. In fact, they're small enough that you may not even see them. You'll see their work, though, in a reduction in pests such as aphids, scale insects and whiteflies. They help control pests by paralyzing them and laying their eggs inside them. To be able to do this, parasitic wasps must be small, usually only an eighth of an inch to a half-inch long.

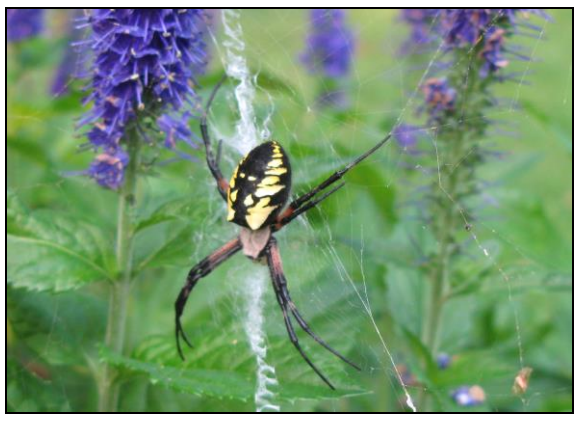
In a very general way, **paper wasps**, which are typically reddish brown with yellow markings, resemble the more familiar and aggressive pest wasps. They love to feed on caterpillars and kill them by stinging and paralyzing them. Sometimes you can see one carrying a caterpillar back to its nest. "People always wonder if a paper wasp is going to sting them," Griffin said. That's not likely, even though they have stingers. "Remember, if they are on the flowers, they are not interested in you unless you do something foolish." Paper wasps are active throughout summer.

Lady beetles, or 'ladybugs', are popular with gardeners because they feast on aphids, scale insects, mites and mealybugs. Sometimes people buy them in cartons or netted containers and release them in the garden to control these pests. That's an environmentally sound method of insect control. Just remember, though, that once you release them, you have no control over whether they'll stay in your garden or fly elsewhere.

The name **"lacewing"** (see photo in first column at left) does this insect an injustice in its adult stage when its diet is only nectar and pollen. The larval stage is another matter. In this stage, it's known as the "aphid lion" or "aphid wolf" because the green lacewing will "wolf down" problem insects, as many as 200 aphids a week by some counts. And if it's still hungry, it will cannibalize other lacewing larvae. Adults can be green or brown with their wings showing a distinct network of veins. The larvae are oblong and have soft bodies with distinctive sickle-shaped lower jaws.

Damsel bugs (above) are slender and elongated and may be cream-colored, dark brown or black. They are most active in mid-summer and feed on thrips, aphids, mites and the eggs of many insect pests. If you can hang on and let the damsel bugs bring the population of bad guys into check, then you can leave the flowers alone and wait for them to go to seed in the fall and attract birds.

Assassin bugs (above) are bigger than many other beneficial insects. They are really interesting, but you shouldn't pick them up because they can inflict a painful bite, Griffin said. So how big are they? "Not quite as big as a praying mantis, but about as big as your index finger." How painful is their bite? "It won't put you in the hospital, but you will know you have been bitten," she said. They move slowly, like a chameleon, and are generally oval-shaped or elongated with a head that's noticeably long and narrow. They are usually black, orange-red or brown. They are predators that feed on a wide variety of insects, ambushing their prey and piercing the body with a short three-segmented beak, and then sucking out body fluids.



Spiders are generalists when it comes to prey and will eat the bad guys as well as the good guys in your garden, says Griffin. You can often find **garden spiders**, above, in the flowers you plant to attract beneficial insects in and around the vegetable garden. If a spider shows up where you don't want it, use a broom to gently transport it to another garden area.

For more beneficial insects, visit https://www.treehugger.com/beneficial-insects-what-need-know-4861670

Geocaching – a Fun Outside Activity for the Whole Family!

https://www.geocaching.com/

Geocaching is an outdoor recreational activity, in which participants use a Global Positioning System receiver or mobile device and other navigational techniques to hide and seek containers, called "geocaches" or "caches", at specific locations marked by coordinates all over the world.

Marinette County communities have been geo-cached. 130 micro-caches have been placed in the following locations:

- Waterfalls (some underwater)
- Boat Launches
- Campgrounds
- Historical Locations
- Parks

Getting outdoors and active as a family is not only good for your health, it's great for family bonding, encouraging a love of adventure in our kids, and developing movement skills.

History of geocaching

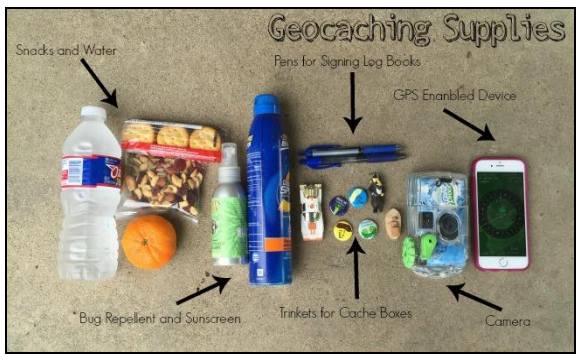
In May of 2000, the U.S. government opened up satellite and GPS communication, enabling anyone with proper GPS receiving devices to navigate to the location of hidden items. Immediately GPS enthusiasts wanted to test the accuracy of these satellites. The first item was hidden in the woods by Dave Ulmer, its GPS coordinates sent out to an online GPS user group to see if anyone could find this "stash". They did!

Within weeks more GPS enthusiasts caught on to this stash-and-hunt idea and started hiding their own stashes. Within a month a newsletter was formed, the name was changed to Geo (for earth) cache (meaning hide or storage) and by that summer the website was launched to enable users to log their stashes, the GPS coordinates, and their finds.

Now, 20 years later, with GPS receivers in our hand-held mobile devices, geocaching has gone mainstream. Over 2 billion caches are hidden around the world, all different shapes, sizes, and levels of difficulty. Some are straightforward, easy to navigate coordinates, others involve solving puzzles or riddles, and others lead to other puzzles and a maze of finds before you reach the final cache. Geocaching is perfect for families with children and for serious orienteers excited for worldwide geocache challenges.

What you need to geocache

- Mobile device with GPS
- Geocaching.com app
- A pencil to sign log books
- Treasures to exchange with items in cache
- Old shoes in case you get muddy
- A sense of adventure!



How geocaching improves physical literacy

Learning early in life that being active is fun, can make you feel good, and comes in many different forms, goes a long way towards a healthy long-term relationship with activity. Geocaching improves physical literacy by taking adventure outside, on foot or bicycle, on different terrains and surfaces. It encourages exploration, climbing, digging, thinking, and moving obstacles to find hidden treasures that await discovery.

Some of the skills that can be developed during a geocaching adventure include:

- balance
- agility
- running
- lifting and lowering objects

Each of those skills come together to help form a person's physical literacy.

Yes, there are rules:

- When cache is found, sign the log.
- Put the cache back exactly where you found it.
- If there are treasures in the cache and you take one, put one of equal or greater value back in its place.
- Get all your friends and family involved!

For more information about Geocaching, visit these sites:

- http://www.therealnorth.com/where-to-play/recreation/
- https://www.wi-geocaching.com/
- https://www.travelwisconsin.com/article/things-to-do/a-wisconsin-guide-to-geocaching
- https://dnr.wi.gov/topic/outdoorrecreation/activities/geocache.html
- https://activeforlife.com/have-fun-with-geocaching/

Grow a Pinecone in a Pot!

(From www.pinterest.com)

1. Go to the woods. Get a pinecone.

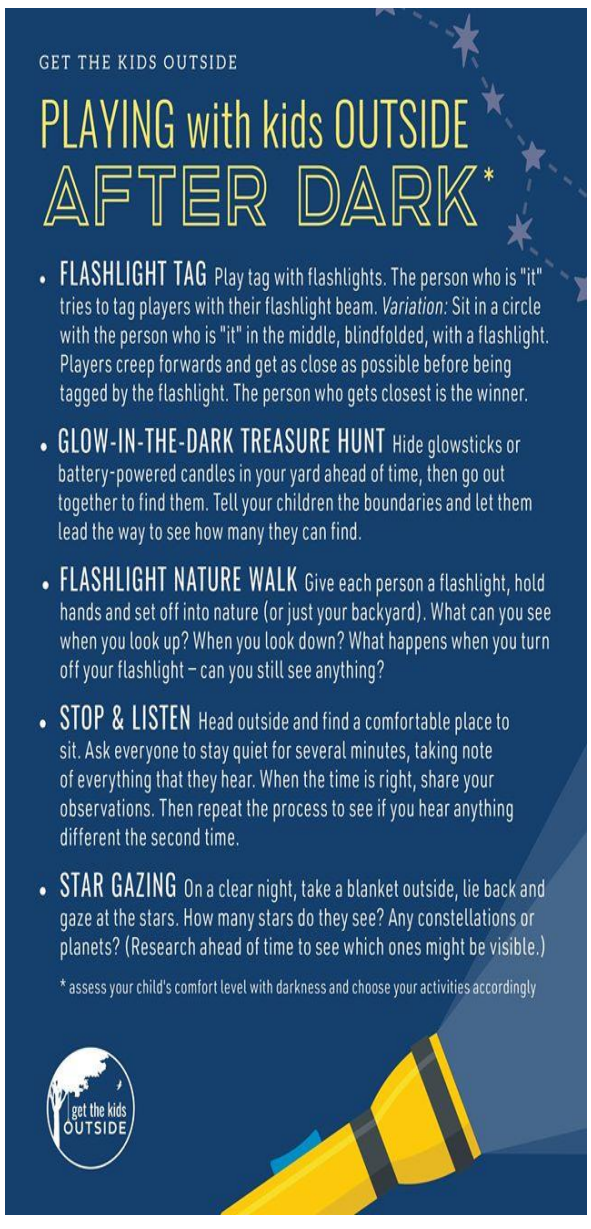
2. Put the pinecone in a pot - so that most of it stands out.

3. Water it every day with a small amount, as excess water will make the pinecone rot.

4. After some time, a tiny tree will appear.

5. Congratulations - they just started oxygen production and you have a piece of forest in your own home.

You're doing something for nature, and you'll see what nature does for you!

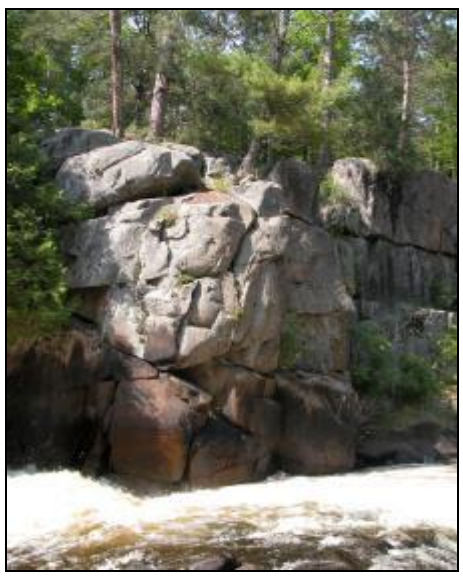


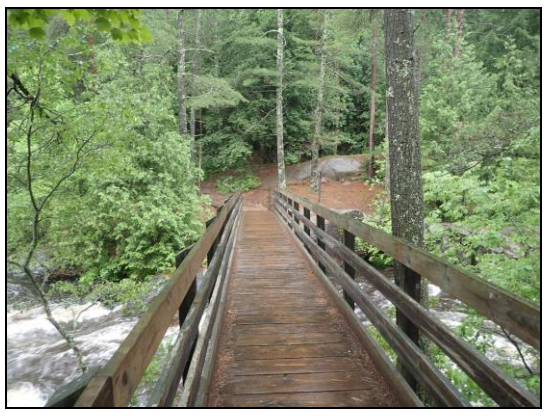
Exploring One of Marinette County's Parks - Dave's Falls

Marinette County operates 22 county park properties: 11 scenic "large parks" with 6 of them offering well-kept, beautifully wooded campgrounds, 4 small day use/wayside parks, 6 boat landings, and a youth camp. Come hike, picnic, whitewater raft, fish, or just relax and enjoy the beautiful scenery.

Dave's Falls is a 66-acre park that features a spectacular waterfall, picnic area with playground, trout fishing, and a bridge over the roaring Pike River. The park is just off Hwy 141, one mile south of Amberg. The entrance sign is right on the highway.

It is a good example of the sort of waterfall found in this area, and it is very easy to visit. The lower falls is a narrow chute with a total drop of about 10 feet. The upper falls is a wider slide that is about 6 feet high. Despite the small size of the falls it is still an interesting area, largely due to the surrounding rock.





You can clamber around on the rocks here to get different views of the falls. There are no fences or railings, so be careful.

All Marinette County-owned parks are now open for day use and require either an annual park sticker or a day pass to enter. Both can be purchased online at www.marinettecounty.com. A day pass can also be purchased at the park for $5.00.

Nearby Falls

There are a fair number of waterfalls in this area, but most of them are rather small. They include Twelve Foot Falls, Eighteen Foot Falls, and Smalley's Falls. Long Slide Falls is about 10 miles to the north and is easily the largest and most scenic of the waterfalls in the area.

More Parks Information

Camping is available at all Marinette County campgrounds. Camping at Morgan Park and Twin Bridges is by reservations only. Twelve Foot Falls, Veterans Memorial, Goodman Park and McClintock Park accept reservations on the odd sites with the even sites being first come, first served.

Large, enclosed log lodges for day use rental are available at Lake Noquebay, Morgan and Goodman Parks. Menominee River Park has a smaller, open-sided shelter available for day use rental. Goodman Park also has a cabin available for overnight rental. Reservations are available online at http://www.marinettecounty.com/parks/, or call the Parks office at 715-732-7641.

- https://www.marinettecounty.com/departments/parks/general-information/
- https://gowaterfalling.com/waterfalls/daves.shtml

Build Your Own Vermicomposting Box

https://www.eekwi.org/activities/arts-crafts/build-your-own-vermicomposting-box

Vermicompost (vermi-compost, vermiculture) is the product of the decomposition process using various species of worms, usually red wigglers, white worms, and other earthworms, to create a mixture of decomposing vegetable or food waste, and bedding materials.

Use 5/8" exterior grade plywood, with the exterior side facing inside, or scrap lumber. (Don't use treated wood.) Using screws, or nails with a spiral shape, will hold the box together under wet and dry conditions. Any wooden box will last longer if it's allowed to dry thoroughly after worm harvest.

For a 2'x 2' x 10" box (suitable for two people, or up to 4 pounds of scraps per week):

- Sides: 22 3/4" x 10"
- Ends: 24" x 10"
- Bottom: 24" x 24"
- Top: 24" x 24"

For a 2'x 3' x 12" box (suitable for three to six people, or up to 6 pounds of scraps per week):

- Sides: 34 3/4" x 12"
- Ends: 24" x 12"
- Bottom: 24" x 36"
- Top: 24" x 36"

Assembly: Nail or screw the ends to the outside edges of the sides. Secure to bottom with five to seven nails or screws per side. Drill nine to 12 quarter-inch drainage holes evenly spaced across the bottom surface. The top is not attached; it just slides on or off.

Options: Nail 2"x2" pieces along the inside bottom edges for support. Attach four small wooden blocks to the bottom corners to raise the box off the ground -- or secure four casters to the bottom corners for a box-on-wheels. Use gate hinges to attach the top to the box.

For more information, visit:

- https://dnr.wi.gov/wnrmag/html/supps/1998/dec98/compost.htm
- https://today.oregonstate.edu/news/wiggle-your-way-worm-composting
- https://www.motherearthnews.com/organic-gardening/guide-to-vermicomposting-zmaz83jazshe

Emerald Ash Borer in Marinette County

Written by UW-Madison, Division of Extension Agriculture & Horticulture Agent, Scott Reuss with assistance from Linda Williams, WI DNR Forest Health Specialist

The emerald ash borer (EAB) is a small, bright green metallic wood-boring beetle that is not native to North America. It is responsible for killing millions of ash trees in the Upper Midwest, including many in Marinette County. Although present in Marinette County, EAB is only currently known to be found in the Town of Wagner, the Town of Goodman, and the City of Niagara. As it continues to spread throughout our area, it truly places all ash trees in its path in imminent danger and that includes many thousands of acres with ash trees present just in Marinette County alone. The current status of EAB presence in Wisconsin is tracked by the Dept. of Ag., Trade, and Consumer Protection and updated continuously on their map, at https://datcp.wi.gov/Documents/EABDetectionsWisconsin.pdf.

The two primary infestation zones in Marinette County are in Wagner and Niagara and are described as 'spotty, but heavy'. There are locations where nearly all ash trees are severely infested and dying, but you may not need to go too far to find non-infested trees. It is highly likely that EAB is established in other areas along the Menominee River between those locations, and landowners everywhere in the county should be on the lookout for the telltale signs/symptoms which ash trees exhibit when infested with EAB. **What are those signs?**

Dying ash trees is one obvious answer, but there are other reasons which ash trees may perish, including native boring insects, root problems, diseases, etc., so we need to look for a couple telltale signs. One of them is pictured above and is the result of woodpecker activity. Woodpeckers find EAB infested trees quickly and flake, or 'fleck', the bark off in their pursuit of the boring larvae which are feeding between the bark and wood. The inner bark or wood will show as a pale, nearly cream color, in stark contrast to the grey outer bark of ash trees. Initial infestations often start higher on the tree trunk, but fully infested trees will have this symptom all the way to ground level. The larval feeding activity is how the insect kills trees. Their larvae feed on the cambium layer in serpentine trails, very effectively girdling the tree and it does not take all that many larvae feeding in a tree to completely girdle the tree trunk.

Why is EAB a big deal?

EAB attacks and kills ash trees including white, green, and black ash, all of which are present in large numbers in Marinette County forests and/or landscapes. Ash trees that are being killed by EAB can quickly become brittle and hazardous and can be a challenge to remove if you wait until the tree is dead to remove it. In urban areas, or for yard trees, removing an infested ash tree before it becomes a hazard will be safer and less costly than waiting until the tree is dead or nearly dead.

The other telltale sign develops after the main trunk is in the process of dying or is already dead. The root system of the tree is still fairly healthy and in an effort to survive, it sends up new shoots from the base of the tree. This phenomenon is known as *epicormic branching* and makes the tree look like a shrub, as it may send up dozens of these new shoots. As I drove through Door County for work visits last summer, I was able to see this constantly, especially in the Sturgeon Bay area.

You can protect individual trees. If you are nearby one of the current infestation zones and have ash trees in your yard you want to protect, it can be done. There are various insecticide treatments that can be utilized to protect individual trees. Some of these treatments are available as homeowner formulations, others need to be applied by certified tree care professionals. Either way, most of them need to be applied each year to afford true protection. The current treatment options are listed and described in this document:

https://eab.russell.wisc.edu/wp-content/uploads/sites/245/2017/04/Homeowner_Guide_to_EAB_Insecticide_Treatments-2017.pdf.

There is also a corollary publication available to any tree care professionals whom are unfamiliar with the treatment options for EAB. Of course, you have the option of planning for the removal of your landscape ash trees and replacing them with other species, if you aren't comfortable with either the cost of treatment or the use of annual insecticide applications. Also, if there are no known EAB infestations near you, utilizing a whole-tree treatment is not warranted or recommended.

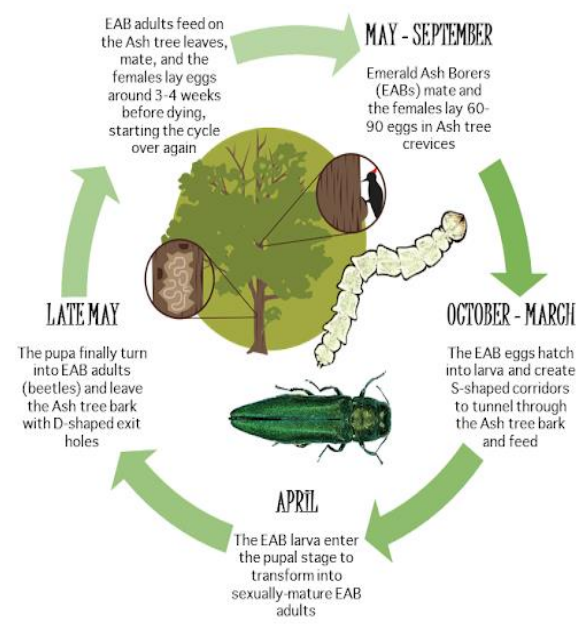
Forest situations are a different story. The only effective treatments are individually applied and are cost-prohibitive for forest management. As such, forest landowners near infected zones may want to contact a forester (private or DNR private lands foresters) to ascertain what their options entail. Waiting until EAB is present will dramatically limit your options. The current silvicultural guidelines for ash forests are available in the 'What You Can Do' tab on the DNR's EAB website, at https://dnr.wi.gov/topic/ForestHealth/EmeraldAshBorer.html.

Whether from a front yard or a forest, ash wood that is infested with EAB must be managed properly. **Most importantly, it should not be moved.** EAB adults have been found to be able to emerge from ash wood that has been cut and split for up to two years. Thus, when dealing with EAB infested trees, cut and split any wood which you want to use as firewood and stack it in the immediate area for two growing seasons or use it as firewood on site.

Other information sources. In addition to the websites already noted above, there are other general sites from which you can easily access EAB information. One of these is the main DATCP EAB page, which has links to all the other sites. It is https://datcpservices.wisconsin.gov/eab/index.jsp. The primary University of Wisconsin page regarding EAB is at https://eab.russell.wisc.edu/.

If you are concerned that you may have EAB in your ash trees, contact Scott Reuss at the Marinette County Extension office, 715-732-7510, scott.reuss@wisc.edu or Linda Williams, Northeast WI Forest Health Specialist, at 920-360-0665, Linda.Williams@wisconsin.gov. *It is very important that you have the correct diagnosis of EAB before reacting with management strategies and it is also critical that state and local personnel are able to track its spread.*

EAB LIFE CYCLE



Northwoods Journal Online

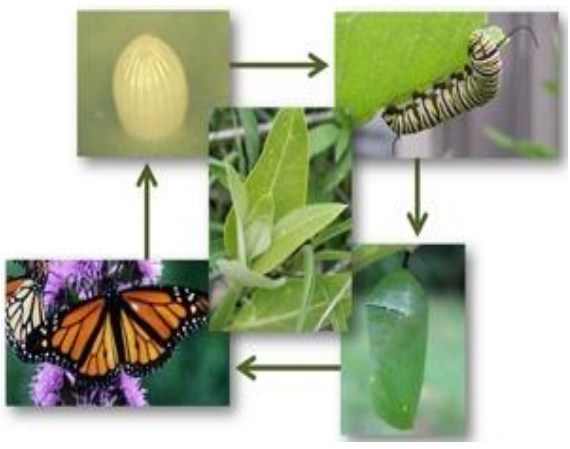
Would you like to read current issues of the *Northwoods Journal* online? Go to www.marinettecounty.com and search for 'Northwoods Journal". We can also send you an e-mail reminder when each new issue is posted online. Contact Anne Bartels, Information & Education Specialist at 715-732-7784 or email her at abartels@marinettecounty.com.

Monarch Butterflies and Milkweeds – an Important Relationship in Nature

From: https://monarchjointventure.org/

Monarchs, like other butterflies and moths (Order *Lepidoptera*), undergo **complete metamorphosis**, meaning that they have an egg, larva (caterpillar), pupa (chrysalis), and adult stage. The egg and caterpillar stages occur only on species of milkweed (genus *Asclepias*), whereas adults survive by nectaring on a variety of flowering plants.

Female monarchs only lay eggs on milkweed plants since monarch caterpillars only eat milkweed. The milkweed plant provides both food and shelter for a caterpillar for approximately two weeks (dependent on temperature), while it eats almost constantly, pausing only to shed its skin. The period between each shedding of the skin, or molt, is called an **instar**. Monarchs have five larval instars and grow to almost 2,000 times their original mass.



A late fifth instar monarch will generally crawl away from the milkweed plant it was feeding on to find a secure location where it forms a silk pad and hangs upside down in a J shape before shedding its skin one last time to expose the bright green chrysalis. In 8 to 15 days, an adult emerges, pumps fluid to its wings to give them shape, and spends several hours drying before it is ready to venture off to find nectar or a mate.

Monarch larvae are specialist herbivores of plants in the family *Asclepiadaceae* (milkweeds), and have been recorded feeding on 27 different North American species in this family. The larvae sequester toxic steroids, known as *cardenolides*, from milkweed, and they use these cardenolides as a defense against predators. The bad taste and toxicity of both the larvae and adults are advertised by conspicuous, warning coloration. When a bird or other predator tastes a monarch, it learns to associate this color pattern with the bad taste, and avoids preying on monarchs in the future.

While monarchs are intrinsically important, conserving monarchs matters for more than just their own protection. Creating habitat for monarchs is one of the most important actions we can take to help stabilize their numbers. From sprawling prairies to backyard gardens, projects scattered across the landscape provide a network of crucial habitat for monarchs. Fortunately, the habitat that monarchs use provides benefits to other species, including humans!

Wildlife Conservation

Creating habitat is one of the most important actions you can take to help the monarch butterfly. From backyard gardens to sprawling grasslands scattered across the country, these areas provide a network of crucial habitat for monarchs. Fortunately, the habitats that monarchs use also provide substantial benefits to other wildlife species. High quality monarch habitat that includes a diverse assortment of native milkweeds and nectar plants can also support a wide range of wildlife. Because the habitat needs of pollinators overlap with those of other animals, pollinator conservation allows us to protect multiple species at once.

Water Quality

You may be asking yourself, how can monarch conservation help improve water quality? The answer is that any monarch planting, large or small, helps reconnect and restore some of the natural functions that our landscape historically provided. Because of this, the habitat you plant to help monarchs can make a positive impact on the water quality in your watershed. Whether you are a gardener, land manager, farmer, city planner, or another type of land or water steward, your pollinator habitat project can make a difference. *See page 1 for a related article about local pollinator gardens!*

Climate Change

CO2 (Carbon Dioxide) in our atmosphere acts like a blanket, warming the Earth. Both monarchs and humans are vulnerable to the effects of the changing climate. Creating monarch habitat is good for us by keeping more carbon out of the atmosphere and mitigating global climate change. How? Plants sequester carbon - carbon sequestration is the ability to contain, store or hold carbon through time. Living plants convert and store atmospheric carbon in their roots, stems, leaves, and wood. When a root, stem or leaf dies, microorganisms that live in the soil convert the plant carbon into soil carbon. Native plants like milkweed, flowers and grasses, which provide habitat for monarchs and other wildlife, have very deep roots. Planting and taking care of these plants can lead to less carbon going into the atmosphere.

Conservation Education

Education is a hugely important piece of conservation, no matter what the species. People need to know first that there is a problem, and then, second, what they can do to help. Monarchs are fantastic subjects both to study and to engage others in conservation. They are an extremely charismatic organism and nearly everyone has something to share about monarchs. Whether it's an encounter they had as a child, something they heard about as an adult, or something in between, monarchs can interest people of all ages! They are a great connection to nature and a reminder that we are just one small part of this incredible planet. Monarchs are a gateway to all the natural wonders of the world.

As an engagement tool, monarchs are an easy pitch. They are beautiful and interesting, so people want to learn more. They are also relatively easy to observe in most places and a wonderful tool to teach about insect life cycles and the connectivity of our natural world. Because people love them and want to help them, they are concerned about the monarch's decline and want to take action. There are many existing tools for educators who want to engage people in monarch conservation.

Camping Recipes – 8 Classic Camping Recipes Every Cook Should Know

https://www.nwf.org/Great-American-Campout/Camping-Resources/Recipes

First featured in a 1965 issue of *National Wildlife* magazine, these timeless recipes remain surefire staples for any camper's cookbook. Whether you're cooking on top of a fire, a griddle, or a gas grill, these foods are sure to please.

1. Eggs

Fried eggs: Get a tablespoon of fat just hot enough to sizzle a test drop of water. Break in the eggs, then take the frypan immediately off the fire. Keep the heat low so the whites won't get tough, then baste the yolks until they are well filmed. Baste the eggs with the hot fat for three or four minutes, add salt and pepper, and serve on a warm plate.

Scrambled eggs: This simple trick will make all the difference: Instead of adding milk, which has a tendency to toughen scrambled eggs, try a tablespoon of cold water for each egg. Mix the eggs and water with salt and pepper to taste. Then heat a tablespoon of fat in a frypan just hot enough to sizzle a drop of water. After tipping in the egg mixture, reduce the heat. Stir the eggs constantly with a fork when they begin to harden. Remove the eggs while they are still creamy and soft.

Alternatively, brown a couple of diced onions with a little grease in a frypan. When these have cooked to a dark blandness, add a small can of tomatoes. Let them begin to bubble. Then break in six eggs. Season with salt and pepper.

2. Bacon

Start bacon in a cold pan to avoid a leaping mass of flames on your frying pan. Fry the bacon slowly over a few coals poked to one side of the campfire. Turn the slices occasionally. If you like them crispy, keep tipping the fat into a handy container where it can be kept for future camp use.

3. Coffee

That first cup of coffee can make all the difference. Drop a rather coarse blend into cold fresh water. Add two level tablespoons for every cup of water. This proportion can be varied for weaker or stronger brews. Suspend or set this over the fire. Keep a close eye on it. Once it has boiled up, lift it to a warm place where no one will be apt to stumble over it. Let it take on body for five minutes, then sip and enjoy.

4. Bread

Fresh frypan bread is a simple thing to cook on the trail. The handiest method is to mix the dry ingredients before leaving your supply base. The following basic mix, given here in one-person proportions, will stay fresh six weeks or more in camp if kept sealed, dry, and reasonably cool:

- 1 cup all-purpose flour
- 1 teaspoon double-action baking powder
- 1 teaspoon salt
- 3 tablespoons oleo/margarine

If this mix is being readied at home, sift the flour before measuring it. Then sift together the flour, baking powder, and salt. Cut in the margarine with two knives, with an electric mixer at low speed, or with a pastry blender, until the mixture resembles coarse meal. For increased food value, add two tablespoons of powdered skim milk for every cup of flour. Place and seal in plastic bags.

If mixing at camp, do it with the ingredients at hand and in the simplest way possible. Any solid shortening may be utilized if the mix is to be used within a short time. Such mix may be carried, if you want, in a glass jar or just folded in wax paper.

When the fire is going and everything else is ready, quickly add enough cold water (about 1/3 cup) to the mix to make a firm dough. Shape this rapidly into a cake about an inch thick. Lay this in a warm frypan. Hold it over moderate heat until a crust forms on the bottom, rotating the pan so the loaf will move enough to not stick. Once the dough has hardened enough to hold together, turn the loaf.

Do this several times until the bread has baked to an appetizing brown on both sides. The frypan bread should be done within 15 to 30 minutes, depending on the heat, which should be moderated. When a twig shoved into the loaf returns without any dough on it, it's time to eat.

5. Flapjacks

All you need to start is the same basic mix that made such delicious frypan bread. For one-person proportions, add 1/2 cup of milk and mix in a whole or dried egg to the dry mix. This milk can be diluted evaporated milk or reconstituted dry milk. Stir only enough to moisten the flour.

If the flapjack batter seems too thick to pour easily, thin it with just a little milk. On the other hand, a little extra flour will provide stiffening, but if the batter is on the thin side, the flapjacks will be tenderer. Let the frypan become hot, then wipe it sparingly with bacon rind. Do not let the metal reach smoking temperatures. Turn each flapjack only once, when it begins showing tiny bubbles. The second side will take only about half as long to cook. Serve steaming hot with your favorite topping.

6. Potatoes

A good way to cook this vegetable is to bake the large ones in their skins on hot ashes, not glowing coals, until they become well blackened on the outside. They're done when a thin, sharp stick will poke easily through their centers. Rake the potatoes out, break them in half, and serve at once with salt and butter. Consider adding sliced onions, peppers, and bacon to create a delicious dish.

7. Steak

If you can, cook a one-pound boneless sirloin, two inches thick, for each camper. Wipe the steaks well with a clean damp cloth, then rub with a mixture of four-parts salt and one-half-part black pepper. A good trick at the start is to get a glowing bed of coals, then scatter on a few hardwood chips or shavings. These will flare up enough to help seal in the juices and assure that flavorsome char relished by so many.

If you're using a grill, get this hot and rub it with suet. If you're using a frypan, let this also get hot, but do not add any grease and tip out any sputtering from the meat. Sear the steaks quickly on both sides. Then cook to individual tastes. Lean meat cooks more quickly than fat meat. Aging also progressively shortens the cooking time. Then there are factors such as size, shape, and amount of bone. Outdoor fires add another variable. A practical way to test is to prick the steak with a pointed knife. If red juice wells out, the meat is rare; pink, medium rare; colorless, well done.

8. Fish

To keep your catch moist and tender, and to bring out its delicate flavor, cook it only until the flesh is no longer translucent. Once the fish is easily flaked, it's done. Enhance the taste by salting, inside and out, an hour before frying. Or sprinkle the inside with pepper and lemon juice just before it goes on the heat. Get the frypan or griddle just hot enough that the butter or margarine barely begins to tan. Roll the fish in crumbs, flour, or corn meal if you want. Brown the fish on both sides, only until flaky. Then add any more desired salt, butter, and perhaps a few drops of lemon juice.

9 Cool Camping Activities to Try With Your Kids

https://www.nwf.org/Great-American-Campout/Camping-Resources/Crafts-Games

Get kids excited about exploring the outdoors and create long-lasting memories with these camping crafts and games!

1. Make a Nature Bracelet

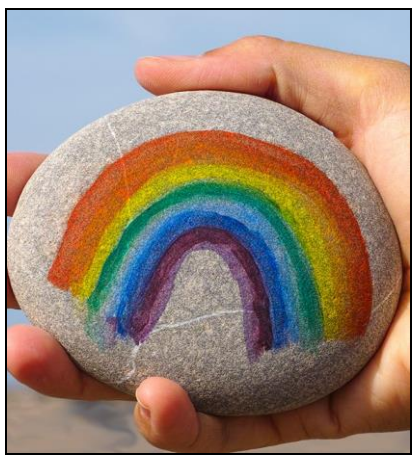
Have your kids pick up treasures as they explore the outdoors to create a cool nature bracelet. First, tear off a piece of wide tape and loosely wrap it around your child's wrist. The tape should be sticky-side out. Then go explore, attaching all the trinkets you find to the bracelet. Create cool patterns or decorate with wild abandon.

2. Camp Like an Animal Game

In this version of charades, imitate the movement of any animal and have people guess what you are. It's great for breaks during hikes, campfire skits, or long car rides. Need some ideas to start the amusement? Try an alligator, chimpanzee, owl, shark, monkey, or giraffe.

3. Art with Rocks

Everyone loves a good rock. Why not paint them to create a mystical critter garden around your tent? Hot glue rocks to one another to create items like eyes for frogs, or build a snowman! If you make matching wildlife rocks, you can even use them as markers to play a nature version of tic-tac-toe.

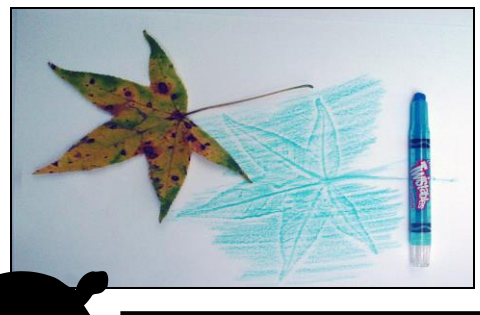


4. Group Storytelling

Turn storytelling into a group activity by taking turns adding a few lines to the plot. One person begins the story with one line to set the scene. Then, the next person adds a line, and so on.

5. Create Leaf Rubbings

This is a wonderful way to spend family time together and teach kids about the changing of the seasons. Place leaves found from hiking vein-side up on a flat surface. Then lay paper on top of the leaves and rub them with a crayon to create beautiful impressions.



6. Alphabet Game

For a fun way to get your little detectives up and running around, have them search the campground or trail for things that start with each letter of the alphabet, in order. When the game is over, treat yourself to some s'mores and a bonfire.

7. Squirt Gun Tie-Dye

Super-soak up the sun by creating vibrant tie-dye T-shirts. Purchase a tie-dye kit and fill each squirt gun with a different color according the manufacturer's directions. Before passing out the squirt guns, spread a tarp out on the grass. Either lay the T-shirt on the ground or make it vertical by attaching it to cardboard or a hanger. Pass out the squirt guns and fire away! When everyone is done, wrap up the shirts in individual plastic bags and let them sit overnight before washing. For an alternative approach, fill the squirt guns with Kool-Aid and have a good old-fashioned squirt gun fight. Don't forget to wear clothing that you won't mind getting dyed.

8. Blow Bubble Snakes

To make this soapy serpent, you'll first want to create a sudsy solution. Pour 2-3 tablespoons of dish soap into a bowl, add 9 ounces of water, and stir. Cut off the bottom of a clean, empty bottle (any size bottle will do, but a 16-ounce bottles works best). Cover the freshly cut hole with a sock or washcloth and use a rubber band to keep the fabric in place. Dip the fabric end into the sudsy solution and blow! To add a colorful twist, apply food coloring to the dish soap.

9. Have a Glow-in-the-Dark Party

Brighten up your night by adding glow sticks to games. You can also create a homemade glow stick ring toss. For a fun glow-in-the-dark party, grab a badminton net and hit LED balloons instead of a birdie!

Adapted from "Camping Games for Kids" by Courtney Ferrarese

8 Family Camping Essentials

https://childhood101.com/8-family-camping-essentials/

Packing up the kids for a camping trip can be quite an adventure! And as you head off to enjoy time in nature and all it has to offer, the last thing you want to be doing is worrying about having the right camping supplies. Be prepared and travel easier with the following list of 8 family camping essentials to bring along on your next camping adventure!

1. An air mattress

Kids can be finicky sleepers and chances are they aren't use to sleeping on a firm surface like the ground. Packing an inflatable air mattress can help. This way their bodies have some support through the night and there will be less tossing and turning. Don't forget the pump to blow it up!

2. High protein snack foods

If your kids don't go for grilled foods, you want to be sure you provide lots of high protein snacks. Peanut butter and crackers, sliced veggies and fruit, nuts, sunflower seeds, granola bars, and pretzels all pack well and make perfect on-the-go treats.

3. Baby wipes

Even if you are no longer in the diaper stage, take along packet of baby wipes. You'll find 101 uses for them when your camping but they are especially handy when the kids need a quick clean up (perfect when a shower is not the easiest option!)

4. Simple games

Bring along a deck of cards, coloring books, crayons, board games, sidewalk chalk, a bat and wiffle ball for some extra family fun. Choose games that pack well without taking up too much room. Even bubbles are fun!

5. Kid-friendly lighting

Nighttime can feel a little scary for kids, so give them their own flashlight or small battery operated light or headlamp. This way they can see around them and feel in control of their space. A small light as the kids drift off to sleep can also offer a greater sense of security.

6. Kid-friendly first aid

Chances are a bump or bruise will happen during your adventures. Be sure to pack child friendly pain reliever, no sting antibacterial spray, unscented bug spray, kid friendly sunscreen, aloe vera gel, and of course lots of band aids. A reusable ice pack in the cooler isn't a bad idea either.

7. A reusable water bottle

Because you will be in the heat, it is important to stay hydrated. Bring along a reusable water bottle for each family member so you can fill it up as needed. A water bottle with a filter is also a good idea.

8. A few comforts of home

Being in a new place, especially out in nature, can sometimes feel a little scary to kids so bring along some comforts from home. This might be their favorite pillow and blanket, a stuffed animal, a favorite toy, or other item that brings them comfort.

Camping with kids can be amazing and being organized with the right supplies will help to take the stress out of your outdoor adventures!